



wherein at least one of the inputs or the outputs output of the at least one chip component [120] is are for conducting a symmetrical signal [electrically conductive materials are capable of conducting symmetrical signals such as sine waves, saw waves, square waves, etc.].

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As we understand is well known in the art, a symmetrical signal (also referred to as a “symmetric” or a “balanced” signal) includes two components, which are applied to corresponding terminals by corresponding signal lines. Both signal components are “hot” in that both transmit signal information. The phases of the signal components at the two terminals typically differ, e.g., by 180°. The amplitude of the signal components is typically equal at both terminals. A symmetric signal may be advantageous in that signal information may be taken from one, or both, terminals. Also advantageous is that influence on the signal line effecting a common mode disturbance can be balanced out by using both terminals.

As used in this application, a symmetrical signal includes signals that propagate along symmetrical signal lines, not a single signal.<sup>2</sup> Accordingly, our independent claims recite:

wherein at least one of the inputs or the outputs of the at least one chip component are for conducting a symmetrical signal.

By specifying that one of “the inputs” or “the outputs” conducts the symmetrical signal, we are making clear that the symmetrical signal is conducted via more than one input or output, e.g., one input may conduct one component of the symmetrical signal and another input may conduct another, out-of-phase, component of the symmetrical signal.

The applied art, including Ahn, is not understood to disclose or to suggest the use of symmetrical signals. In this regard, we contend that the Office Action misconstrues “symmetrical signal”. While a sine wave, a saw wave, or a square wave may be a component of a symmetrical signal, there is no disclosure in the applied Ahn reference of the symmetrical signal claimed, namely, a signal conducted via two terminals, e.g., having two out-of-phase components, each of which includes signal information.

The “Response to Arguments” section of the Office Action states:

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<sup>1</sup> Office Action, pages 3 and 4, referring to disclosure in Ahn

<sup>2</sup> See, e.g., page 10, lines 18 to 22 of the English-language specification

In regard to the arguments in the first paragraph of page 12 of the remarks, it is noted that the term "symmetrical signal" is not strictly defined and can be interpreted to mean any signal that can be view over time to have a signal that is symmetrical on either side at a given point in time, e.g. the crest of a sine wave, square wave, etc.

In regard to the arguments in the second to last paragraph of page 12 through page 13 of the remarks, which are directed to a structure which has two conductor components which carry simultaneously two signals which are symmetrical to each other, do bring up significant structural differences as compared to the current claim language, however since the current claim language can be interpreted in a broadest reasonable interpretation to signify the position taken by the Examiner, the prior art sufficiently meets the claimed limitations.

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We respectfully disagree that the broadest reasonable interpretation of the claim language can be read to discount the "significant structural differences", which appear to refer to structural differences between the claim language and the art, although that is not entirely clear. In any case, we respectfully submit that the broadest reasonable interpretation of claim language must take into account the specification as it would be interpreted by one of ordinary skill in the art. This is described in MPEP §2111, as follows:

During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:

The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1). (emphasis added)

While it is improper to import claim limitations from the specification, as plainly set out in MPEP §2111.01(III):

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<sup>3</sup> Office Action, page 25

"[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application."...The ordinary and customary meaning of a term may be evidenced by a variety of sources, >including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art."

It is our contention that, once armed with the disclosure in the specification, one of skill in the art would understand the meaning of "symmetrical signal" not to be merely a signal that is symmetric relative to a point in time, but rather a balanced signal having two components that differ in terms of phase. The claims reinforce this interpretation by reciting that "at least one of the inputs or the outputs of the at least one chip component are for conducting a symmetrical signal". That is, the "at least one" refers to one of "the inputs" or "the outputs", not to a single input or output. Use of the plural verb "are", as in "are for conducting a symmetrical signal", indicates that the subject is plural. This means that the claims cannot reasonably be interpreted to mean that "at least one of the inputs or the outputs" refers to a single input or output, as appears to be the interpretation adopted by the Office Action.

Also, in the Office Action, Chin was cited for its alleged disclosure of impedance conversion in the range claimed, namely, 5 % to 400%.

According to our understanding, Chin involves matching impedances of a printed circuit board's landing pad and trace, "thereby substantially avoiding impedance discontinuity between the pad and the trace".<sup>4</sup> This may be done by adding metal strips (capacitance) to board's metal layer or reference plane, as shown in Fig. 2a. Accordingly, contrary to what is said in the Office Action, we do not understand Chin to describe an integrated impedance converter configured to transform an impedance of the at least one chip component by 5 % to 400%, but rather a method of matching impedances of elements of a printed circuit board, and matching those impedances to within 10% of each other.

The Office Action, however, states:

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<sup>4</sup> Paragraph 0009

In regard to the arguments in the last two paragraphs of page 13 through page 16 of the remarks regarding impedance conversion, it is noted that "impedance matching" means to convert an outside and incoming signal impedance to an inside signal impedance level, so as Chin states, impedance matching components effects an over 10 percent change.

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We reiterate that the Office Action's definition of impedance matching does not necessarily disclose or suggest transforming an impedance of the at least one chip component by 5% to 400%. For example, if the impedance of one component is 100 $\Omega$  and the impedance of another component is 112 $\Omega$ , to match the impedances to within 10% would only require an impedance conversion of about 2% to 3%. Accordingly, what we understand Chin to describe is the quality of the impedance match (e.g., "better than 10%"), but not the actual impedance transformation required to obtain that quality of matching.

For at least the foregoing reasons, we respectfully request reversal of the rejections of independent claims 1, 12, 14 and 26.

Please charge any fees or credit any overpayment, to deposit account 06-1050, referencing Attorney Docket No. 14219-075US1.

The undersigned attorney can be reached at the address shown above. Telephone calls regarding this application should be directed to 617-521-7896.

Respectfully submitted,

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<sup>5</sup> Office Action, page 25